

### **REMARKS/ARGUMENTS**

Claims 1-7 are pending in the present application. Claims 1-4 are rejected and claims 5-7 are withdrawn from consideration by the Examiner as being drawn to a non-elected invention.

In the present Amendment, claims 1-7 are canceled without prejudice or disclaimer and replaced by new claims 8-17. Claims 8-11 recite a method for the continuous production of polyamide. Claims 12-17 are directed to a method for the continuous production of copolyamide. These claims are written in a manner that is believed to overcome the various grounds of rejection raised against original claims 1-4. The new claims are, moreover, entirely supported by the application as filed and thus they raise no issue of new matter. Entry of claims 8-17 into the file of the present application is, therefore, respectfully requested.

Claims corresponding to original "device" claims 5-7 are not presented herein in light of the restriction requirement issued by the Examiner in the March 8, 2007 Office Action. Notwithstanding this, however, the applicant herein specifically reserves his right to pursue patent protection for his "device" in a further continuing application.

Upon entry of the present Amendment, claims 8-17 will be pending in the application.

### **Claim Rejections Under 35 U.S.C. §112**

Original claim 2 was rejected under 35 U.S.C. §112, second paragraph. The Office Action states that the subject claim recites, "a reflux column outside the limit of the method" and that this phrase is not clear.

In response, applicant submits that the cancellation of claim 2 renders this issue moot. Furthermore, the indicated language does not appear in any of the new claims 8-17. The Examiner is, therefore, respectfully requested to reconsider and withdraw the subject rejection.

### **Claim Rejections Under 35 U.S.C. §102**

Claims 1-3 are rejected under 35 U.S.C. §102(b) as being allegedly anticipated by U.S. Patent No. 6,107,449 of Wiltzer et al. (hereinafter "the '449 Wiltzer patent") for the reasons set forth on p. 3 of the Office Action. This rejection is respectfully traversed.

The '449 Wiltzer patent corresponds to Reference DE-A1 196 21 088, which is discussed in detail at the top of p. 2 of the English-language translation of International Application No.

PCT/EP03/03091 upon which the present application is based. That discussion is specifically incorporated by reference into the remarks set forth herein in response to the rejection based on the subject patent.

The presently claimed method (as recited, e.g., in claims 8 and 12) is readily distinguishable over the '449 Wiltzer patent which neither anticipates nor renders obvious the applicant's method as now claimed. The description of DE-A1 196 21 088 (i.e., the '449 Wiltzer patent) contained at p. 2 of applicant's specification points out that, ". . . a part of the evaporating water has to be separated off at high pressure and high temperature in the polymerization reactor, which results in high energy consumption without it being possible completely to avoid diamine losses." (emphasis supplied). In contrast to the method described by the reference, however, in the presently claimed method no effort is made to separate the water that evaporates in the first stage of the method (occurring in polymerization reactor (2)). As specifically recited in, e.g., new claims 8 and 12, the water (which contains reaction components) that is evaporated in the first stage of applicant's process is not separated out but it is rather passed into at least one further stage of the claimed process. Moreover, the subject claims then go on to state that the water is [then] expelled only in the at least one further stage.

In the case of the '449 Wiltzer patent, the separation described above is obtained by connecting the gas space in second pressure reactor (11), via a valve (13), to a rectification column (12) - so as to recover at least part of the caprolactam or diamine contained within the evaporated water which can then be returned to the same reactor, and to immersion vessel (14) so as to remove excess water. The caprolactam or diamine is thus fed back into the reactor, whereas the water exits the polymerization process (see, e.g., col. 3, lines 61-64 of the '449 Wiltzer patent). Apart from the fact that, with the process according to the reference, the loss of at least a portion of the caprolactam or diamine cannot be avoided, the procedure as described in the reference additionally constitutes a source of high energy losses, i.e., taking into account the temperature of the water which leaves at this stage. In contrast, the presently claimed process suffers from none of these deficiencies due to the fact that water is not separated in the same stage wherein the reference teaches to do so.

In summary, therefore, it is noted that the '449 Wiltzer patent discloses that both the 'second' pressure reactor (11) and the postcondensation reactor (17) are provided with means (12,14; 19,20) for separating water from caprolactam or diamine in the vapor which is leaving

the process. However, in the presently claimed process the water that evaporates from the gas space of the first stage (i.e., polymerization reactor 2) is not separated from the caprolactam or diamine contained therein, but is passed in its entirety along to the second stage (the postcondensation reactor 5), with such second stage being the only stage wherein the water is separated from the caprolactam or diamine contained therein, i.e., with the use of reflux column 8 and trap 9.

Further to the above, on p. 3 of the Office Action, the Examiner cites to column 1, line 40 (applicant assumes the Examiner means to refer to lines 40-45) of the '449 Wiltzer patent. This portion of the reference, however, only reflects the facts as set forth above, i.e., that water which has evaporated at each of the steps (including the first reaction step) is removed or driven out. There is no teaching, or even a suggestion that the water so driven out, which is known to contain reaction components, should be passed to a further stage or step, as is presently recited in applicant's claims.

Turning next to the Examiner's comments regarding (original) claim 2 on p. 3 of the Office Action, now re-written as new claims 9 and 13, applicant does not contest that reflux columns were known per se in the art at the time of the present invention. However, in the case of the cited reference, such reflux columns are used at each stage or step of the process (see, e.g., col. 1, lines 40-45 of the reference). In contrast, in the method as now recited in applicant's claims, the reflux column is used only with water from the "at least one further stage" and not with water from the first stage.

Based on the reasons above, the Examiner is respectfully requested to reconsider and withdraw the §102(b) rejection against applicant's claims 1-3.

### **Claim Rejections Under 35 U.S.C. §103**

On p. 4 of the Office Action claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over the '449 Wiltzer patent. This ground of rejection is respectfully traversed.

Claim 4 has been canceled in this Amendment, wherein the subject claim is rewritten as new claims 11 and 16. These claims are simply directed to the fact that the further stage(s) at which the water is removed are stages having a lower operating temperature than that of the first reaction stage. They depend, respectively, upon new claims 8 and 12 and are they thus contain all of the recitations found in those independent claims. They are believed to distinguish over

the subject reference for the same reasons as the independent claims and the Examiner is, therefore, respectfully requested to reconsider and withdraw the rejection under §103 of applicant's claim 4.

#### **Double Patenting Rejection**

Claims 1-3 are rejected on the ground of non-statutory obviousness-type double patenting over claims 1 and 3 of U.S. Patent No. 6,107,449 for the reasons given at p. 5 of the Office Action. This rejection is respectfully traversed.

As indicated above, claims 1-3 are cancelled in the present amendment and replaced by a set of new claims which are believed to recite a method that is non-obvious over the invention recited in claims 1-3 of the '449 Wiltzer patent. As pointed out above, the present claims differ from the prior patent claims in that they are directed to a method wherein water containing reaction products evaporated from the first reaction stage is not separated out, but is rather passed into what is characterized as "the at least one further stage" and further wherein water is expelled from the reaction system only in one such, "at least one further" stage.

Based on the above, the Examiner is respectfully requested to reconsider and withdraw the double patenting rejection against applicant's claims 1-3.

#### **Information Disclosure Statement**

Submitted herewith is a copy of art together with a form listing the same for the convenience of the Examiner.

I respectfully request that the information submitted be considered and enclose our check number 27906 in payment of the required \$180.00 fee.

In the event the actual fee is greater than the payment submitted or is inadvertently not enclosed or if any additional fee due during the pendency of this application is not paid, the Patent and Trademark Office is authorized to charge the underpayment to Deposit Account No. 15-0700.

### Summary

The new claims and remarks presented herein are believed to overcome all of the grounds for rejection raised against original claims 1-4 and, as such, the Examiner is respectfully requested to reconsider and withdraw those rejections. If the Examiner does not agree, but believes that an interview would advance the progress of this application, he is respectfully invited to telephone applicant's representative at the number below in order that an interview concerning this case may be arranged.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: February 8, 2008

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